

2021-11-19

COURSE SYLLABUS



Frontiers in Digital Innovation Research

Phenomena, Theories, and Approaches

7,5 ETCS credits

Anna Essén, SCDI and Stockholm School of Economics:

anna.essen@hhs.se

Johan Magnusson, SCDI and University of Gothenburg:

johan.magnusson@ait.gu.se

Johan Sandberg, SCDI and Umeå University

johan.sandberg@umu.se

Background

Digital technologies demonstrate unique properties, such as malleability and flexibility. Such properties make them generative, in the sense that they continuously produce new opportunities for the creation of products, services, infrastructures, business models, and organizational forms (Bharadwaj et al., 2013; Lyytinen et al. 2016; Nambisan et al. 2017; Yoo et al. 2010). Digital technologies are also increasingly affordable and accessible, radically lowering entry barriers. As new stakeholders are engaged, value creation processes spread far beyond corporate lab environments, further embedding digital technologies into society. Ultimately, digital technologies alter the environments of organizations, give rise to tensions and opportunities, and call for profound change in how they organize for innovation (Gregory et al. 2015; Sandberg et al. 2020; Svahn et al. 2017).

In response, the information systems (IS) community has established a strong foundation for research on topics such as digital innovation (Fichman et al. 2014; Yoo et al. 2012; Yoo et al. 2010), digital infrastructure (Constantinides et al. 2018; Henfridsson and Bygstad 2013; Tilson et al. 2010), digital transformation (Majchrzak et al. 2016; Nambisan et al. 2019), and digital ecosystems (El Sawy et al. 2010; Jacobides et al. 2018; Suseno et al. 2018; Tiwana 2015). This research is further accelerated by regional and global initiatives, such as [Swedish Centre for Digital Innovation](#) and the [AIS special interest group on Digital Innovation, Transformation, and Entrepreneurship](#) (SIG DITE).

Target Audience/Entrance Qualifications

The course is designed for Ph.D. students pursuing a dissertation on digital innovation, digital transformation, digital entrepreneurship, or a similar topic.

We accept a maximum of 18 students. Applicants will be evaluated on the match between thesis focus and course content.

Learning Outcomes

After finalizing the course, participants shall demonstrate a capacity to design creative research studies of transformative digital innovation phenomena. More specifically, the participants should increase their abilities to conduct the following tasks on an advanced level:

- *Identify* and *analyze* phenomena of relevance for research and practice.
- *Formulate* relevant research questions.
- *Develop* appropriate theoretical frameworks.
- *Assess* methodological options and *select* appropriate methods to leverage different types of data sources.
- *Evaluate* methodological design choices.
- *Reflect* on contributions of research.
- *Recommend* dissemination strategies.

Content, Structure, and Faculty

This Ph.D. course offers an overview of contemporary research in the area of digital innovation. In particular, it showcases a range of theories and approaches

2021-11-19

that researchers can employ to study the many complex phenomena associated with digital innovation (see Table 1 below). A range of focus areas are discussed in relation to selected readings and illustrated by SCDI research projects. The course is divided into four phases, including both online and offline sessions. We will run the offline sessions in [Riksgränsen](#) – an internationally renowned ski resort in the very northern parts of Sweden.

Phase 1: Introduction to the course and to foundational work on digital innovation.

When? Two-hour long sessions at two occasions between March 14th - March 25th.

Activities: Two online meetings, preparation for phase 2 by reading the assigned material.

Location: Zoom

Phase 2: Seminar week with presentations by SCDI researchers

When? Full days, March 28th - April 1st.

Activities: Offline presentations and seminars.

Location: [Riksgränsen](#)

Phase 3: Online seminars with SCDI affiliated researchers

When? Two-hour long sessions at four occasions between April 4th - April 15th.

Activities: Four online seminars

Location: Zoom

Phase 4: Application writing

When? April 18th - June 17th

Activities: Writing, reviewing, and presenting the research application (the final examination, see below). Includes both online meetings and a final offline seminar in Stockholm on the 17th of June where we will conclude the course together. Location:

Zoom (except for the final day June 17th)

All sessions are not fully designed yet. Table 1 below however provides a list of the sessions that we have confirmed. A few more will be added. For more information about faculty members, click on the links below:

Table 1: Faculty, perspectives, and phenomena introduced in the course.

Topic	Instructors
<i>A Sociomaterial Perspective on the Micropractices of Organizing with Technology</i>	Lotta Hultin and Magnus Mähring , Stockholm School of Economics
<i>Citizen Science in Digital Collective Action Research</i>	Lisen Selander , University of Gothenburg
<i>Digital Health Platforms: A Critical Realist Approach to Innovation</i>	Anna Essén and Magnus Mähring , Stockholm School of Economics
<i>Digital Innovation – Frontiers and Directions</i>	Ola Henfridsson , University of Miami
<i>Investigating Complex Digital Ecosystems</i>	Johan Sandberg , Umeå University
<i>Precision X - How Machine Learning Shapes Practices</i>	Jonny Holmström , Umeå University
<i>Researching Emerging Technologies</i>	Juho Lindman , University of Gothenburg
<i>Social Network Analysis in Organizational Research</i>	Fredrik Svahn , University of Gothenburg
<i>Scaling Digital Ventures.</i>	Henrik Wimelius , Umeå University
<i>The Role of Digital Innovation in Organizational Transformation</i>	Daniel Nylen , Umeå University
<i>Organizing in the Digital Age: Frontiers in Digital Innovation Research</i>	Kalle Lyytinen , Case Western Reserve University
<i>Pragmatic Programmatic research</i>	Johan Magnusson , University of Gothenburg
<i>Process Research on Innovation Trajectories</i>	Michael Barrett , Cambridge University, Visiting Professor, Stockholm School of Economics
<i>Video Ethnography in Digital Entrepreneurship</i>	Anna Brattström , Lund University, Research Fellow, Stockholm School of Economics

2021-11-19

Examination

To complete the course, students are required to write a complete research application, targeting a recognized research funding agency¹. The examination engages the specified learning outcomes across four general criteria; scientific contribution; practical relevance; originality/creativity; and feasibility.

This form of examination is selected to (1) stimulate extensive engagement with the course literature, (2) foster a creative thesis design process, and (3) support long-term career development.

Grading

Pass or Fail

Required Reading

A list of course literature will be released eight weeks before the course start.

¹ E.g. Vetenskapsrådet, Stiftelsen för Strategisk Forskning, Wallenbergstiftelserna, Forte, VINNOVA

References

- Bharadwaj, A., El Sawy, O. A., Pavlou, P. A., and Venkatraman, N. 2013. "Digital Business Strategy: Toward a Next Generation of Insights," *MIS Quarterly* (37:2), pp. 471-482.
- Constantinides, P., Henfridsson, O., and Parker, G. G. 2018. "Platforms and Infrastructures in the Digital Age - Special Issue Introduction," *Information Systems Research* (29:2), pp. 381-400.
- El Sawy, O. A., Malhotra, A., Park, Y. K., and Pavlou, P. A. 2010. "Research Commentary: Seeking the Configurations of Digital Ecodynamics: It Takes Three to Tango," *Information Systems Research* (21:4), pp. 835-848.
- Fichman, R. G., Dos Santos, B. L., and Zheng, Z. 2014. "Digital Innovation as a Fundamental and Powerful Concept in the Information Systems Curriculum," *MIS Quarterly* (38:2), pp. 329-A315.
- Gregory, R. W., Keil, M., Muntermann, J., and Mähring, M. 2015. "Paradoxes and the Nature of Ambidexterity in It Transformation Programs," *Information Systems Research* (26:1), pp. 57-80.
- Henfridsson, O., and Bygstad, B. 2013. "The Generative Mechanisms of Digital Infrastructure Evolution," *MIS Quarterly* (37:3).
- Jacobides, M. G., Cennamo, C., and Gawer, A. 2018. "Towards a Theory of Ecosystems," *Strategic Management Journal* (39:8), pp. 2255-2276.
- Lyytinen, K., Yoo, Y., and Boland Jr, R. J. 2016. "Digital Product Innovation within Four Classes of Innovation Networks," *Information Systems Journal* (26:1), pp. 47-75.
- Majchrzak, A., Markus, M. L., and Wareham, J. 2016. "Designing for Digital Transformation: Lessons for Information Systems Research from the Study of Ict and Societal Challenges," *MIS Quart.* (40:2), pp. 267-277.
- Nambisan, S., Lyytinen, K., Majchrzak, A., and Song, M. 2017. "Digital Innovation Management: Reinventing Innovation Management Research in a Digital World," *MIS Quarterly* (41:1), pp. 223-238.
- Nambisan, S., Wright, M., and Feldman, M. 2019. "The Digital Transformation of Innovation and Entrepreneurship: Progress, Challenges and Key Themes," *Research Policy* (in press).
- Sandberg, J., Holmström, J., and Lyytinen, K. 2020. "Digitization and Phase Transitions in Platform Organizing Logics: Evidence from the Process Automation Industry," *MIS Quarterly* (44:1), pp. 129-153.
- Suseno, Y., Laurell, C., and Sick, N. 2018. "Assessing Value Creation in Digital Innovation Ecosystems: A Social Media Analytics Approach," *The Journal of Strategic Information Systems*.
- Svahn, F., Mathiassen, L., and Lindgren, R. 2017. "Embracing Digital Innovation in Incumbent Firms: How Volvo Cars Managed Competing Concerns," *MIS Quart.* (41:1), pp. 239-253.
- Tilson, D., Lyytinen, K., and Sørensen, C. 2010. "Research Commentary---Digital Infrastructures: The Missing Is Research Agenda," *Information Systems Research* (21:4), pp. 748-759.
- Tiwana, A. 2015. "Evolutionary Competition in Platform Ecosystems," *Information Systems Research* (26:2), pp. 266-281.
- Yoo, Y., Boland, R. J., Lyytinen, K., and Majchrzak, A. 2012. "Organizing for Innovation in the Digitized World," *Organization Science* (23:5), pp. 1398-1408.

2021-11-19

Yoo, Y., Henfridsson, O., and Lyytinen, K. 2010. "Research Commentary: The New Organizing Logic of Digital Innovation: An Agenda for Information Systems Research," *Information Systems Research* (21:4), pp. 724-735.